COMMONWEALTH OF MASSACHUSETTS

OFFICE OF CONSUMER AFFAIRS AND BUSINESS REGULATION

DEPARTMENT OF TELECOMMUNICATIONS & ENERGY

October 4, 2004

D.T.E. 04-67

Petition of KeySpan Energy Delivery for approval by the Department of Telecommunications and Energy for a waiver, pursuant to 220 C.M.R. § 101.02(2), from the requirements in 49 C.F.R. Part 192, §192.619(a), inclusive, for uprating the maximum allowable operating pressure of a high pressure pipeline traversing through the Town of Bourne, Massachusetts.

APPEARANCE: Patricia J. Crowe, Esq., Senior Counsel
KeySpan Energy Delivery
52 Second Avenue
Waltham, MA 02451
-and-
David E. Weber, Manager - Regulatory Compliance
KeySpan Energy Delivery
52 Second Avenue
Waltham, MA 02451

I. INTRODUCTION

On June 29, 2004, Colonial Gas Company d/b/a KeySpan Energy Delivery ("KeySpan"), an intrastate natural gas distribution company that operates in Massachusetts, filed a petition with the Department of Telecommunication and Energy ("Department") seeking a waiver of the pressure testing requirement for the determination of the maximum allowable operating pressure ("MAOP") of a twelve-mile long portion of a pipeline. The request was made pursuant to 220 C.M.R. § 101.02(2). On August 19, 2004, KeySpan amended its petition by reducing the length of pipeline subject to the waiver from twelve miles to 8.2 miles. KeySpan seeks to elevate the MAOP of a steel pipeline to a pressure of 270 pounds per square inch gauge ("psig") without subjecting the pipeline to a test pressure of 1.5 times the new MAOP.

II. REGULATORY REQUIREMENTS

The minimum federal safety standards for transportation of natural gas by pipeline are contained in Title 49 C.F.R. Part 192 ("Part 192").[1] The Department may grant a waiver of any provision of Part 192. The Department's regulations, specifically 220 C.M.R. §101.02(2), state:

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[1] Part 192.619 sets out four methods for determining the MAOP of a pipeline. A pipeline's MAOP may not be set higher than the lowest of the four values determined below using:
(1) the design pressure of the weakest part (of each valve, fitting, and piece of pipe);
(2) pressure testing of the pipeline after it is built to a pressure higher than the MAOP (determined by multiplying the MAOP by a factor of 1.5);
(3) the highest pressure at which the pipeline was operated between July 1, 1965 and July 1, 1970 (applicable to pipelines built before Part 192); and
(4) the safest MAOP based on a review of the history of a pipeline, including investigating known corrosion and the operating pressure of the pipeline.

> The [Department] may issue a waiver to a gas corporation or municipal gas department from the provision of Part 192 in Title 49 of the Federal regulations providing that the waiver pertains to an intrastate facility and the D.P.U. gives notice of such waivers to the Department of Transportation at least 60 days before the waiver becomes effective.

Any waiver of any of the provisions of Part 192 granted by the Department is subject to the approval of the U.S. Department of Transportation's Office of Pipeline Safety ("OPS"). 49 U.S.C. § 60118(d) states in relevant part that:

> the State authority may waive compliance with a safety standard to which the certification . . . applies in the same way and to the same extent the Secretary may waive compliance . . . . However, the authority must give the Secretary written notice of the waiver at least 60 days before its effective date. If the Secretary makes a written objection before the effective date of the waiver, the waiver is stayed . . . .

III. THE COMPANY'S PROPOSAL

According to Keyspan, Cape Cod is the fastest growing area of its service territory. In addition to the year-round population, there is a large influx of tourists every summer. As a result, the normal load demand and peak load demand for gas on Cape Cod has been steadily increasing. Currently, KeySpan serves approximately 95,000 natural gas customers on Cape Cod (Petition at 3).

KeySpan explained that it has met part of the increased demand by increasing the MAOP in the Sagamore Line, one of the two major distribution lines on Cape Cod. In 2002, KeySpan increased the MAOP of the Sagamore Line to 270 psig.[2] During the severe cold in

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[2] On September 3, 2002, the Department granted a waiver of § 192.619(a) which allowed KeySpan to increase the MAOP of the Sagamore Line from 200 psig to 270 psig without conducting a pressure test at 150 percent of the new MAOP. D.T.E 02-16-J.

(continued…)

the winter of 2003-2004, however, KeySpan experienced peak demand for gas on Cape Cod. Portable liquefied natural gas and compressed natural gas units were placed into temporary service to maintain system pressures and prevent customer outages. In spite of these measures and the increased MAOP of the Sagamore Line, KeySpan experienced some customer outages due to low-system pressures. In order to continue to meet the increased normal and peak demands, KeySpan stated that it needed to uprate a portion of the other major distribution line on Cape Cod (id. at 3, 4).

Two major distribution lines supply gas to KeySpan customers on Cape Cod: the Sagamore Line and the Bourne Line. The Sagamore Line extends from one of Algonquin Gas Transmission Company's ("Algonquin") meter stations in the Town of Bourne, crosses over the Cape Cod Canal on the Sagamore Bridge, and extends to KeySpan's LNG plant in the Town of Yarmouth. The Sagamore Line is 23.9 miles long. This line's MAOP was uprated from 200 psig to 270 psig in 2002. This line serves about 60 percent of KeySpan's customers on Cape Cod (id.).

The second line, the Bourne Line, begins at another Algonquin meter station in Bourne. This line crosses the Cape Cod Canal on the Bourne Bridge. On the other side of the Cape Cod Canal, the line extends through the Otis Air National Guard Base ("Otis ANGB"), also in Bourne. It continues through the Towns of Falmouth and Mashpee and into the Town of Barnstable. The line is approximately 27.6 miles long (Petition at 4; Exh. 1). In order to

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[2](…continued)

OPS approved this waiver by letter dated January 28, 2003.

maintain system reliability, KeySpan proposes to increase the MAOP of an 8.2 mile-long section of the Bourne Line from 200 psig to 270 psig (Amendment Letter at 1, Table 1A; Exh. 1A). KeySpan will build a district regulator station at Connery Avenue and West Truck Road on the Otis ANGB. This district regulator station will reduce the MAOP from 270 psig to 200 psig (Amendment Letter at Table 1A; Exh. 1A).

About 6.3 miles of pipe is twelve-inch nominal diameter (Amendment Letter at Table 1A). The remaining 1.9 miles of pipe is eight-inch and ten-inch nominal diameter (id.). Nearly all of the pipe was installed after 1971, when Part 192, the Federal gas pipeline safety code, went into effect. During 2003 and 2004, KeySpan replaced nearly three miles of bare steel pipe with coated steel pipe (Petition at 3, Amendment Letter at Table 1A). About 4.1 miles of pipe was installed between 1980 and 1993 (Amendment Letter at Table 1A). The remaining 1.1 miles of pipe was installed circa 1963 (Amendment Letter at Table 1A).

According to Keyspan, all of the buried pipe is coated and cathodically protected in accordance with Part 192 and 220 C.M.R. § 101.00 et seq., the Massachusetts gas pipeline safety code (Petition at 4). The pipe located on the Bourne Bridge is coated, except where it rests on pipe supports. The pipe is painted at those locations (id.). There have been no corrosion leaks on the line during its entire service history (id. at 7).

KeySpan stated that all of the valves and fittings on the line will be inspected to ensure that they have a design pressure of at least 270 psig. Any of these components that have a design pressure of less than 270 psig will be replaced before the uprate begins (Petition at 5). According to the design formula contained in Part 192, the weakest portion of the line has a

maximum design pressure of 686 psig, which is well above the proposed MAOP of 270 psig. Keyspan explained that, after the uprate is completed, the weakest portion of the line will be at 19.7 percent of its specified minimum yield strength ("SMYS") (Petition at Table 3). This is below the 20 percent of SMYS limit set for distribution lines contained in Part 192.3.

The pipeline crosses one bridge, the Bourne Bridge which is over the Cape Cod Canal. An expansion loop in the pipe relieves thermal expansion stresses. An automatic shutdown valve is located upstream of the bridge and a check valve is located downstream of the bridge. These valves would automatically stop the gas flow if the pipe on the bridge failed (Petition at 7).

There are eight main line valves in the pipeline. Each of these valves has been designated as a primary valve by KeySpan (Petition at 5; Amendment Letter at Exh. 2A). Each primary valve must be inspected and serviced at least once each calendar year to comply with Part 192.747(a), which states:

> Each valve, the use of which may be necessary for the safe operation of a distribution system, must be checked and serviced at intervals not exceeding 15 months, but at least once each calendar year.

There are four district regulator stations connected to the Bourne Line (Amendment Letter at Exhibit 2A). KeySpan has designated the inlet valves to these stations as primary valves (Petition at 5). These valves will also be inspected and serviced annually as previously described (id.).

IV. ANALYSIS AND FINDINGS

After the uprate is completed, KeySpan's Bourne Line will meet three of the four requirements of Part 192.619(a). The design pressure of the weakest part is 686 psig, well above the proposed MAOP of 270 psig. That design pressure was determined using the formula contained in Part 192.105(a) (Petition at 8).

The history of the line has been reviewed by KeySpan. All of the nearly three miles of unprotected, bare steel pipe was replaced in 2003 and 2004 (id. at 3). All butt welds on the replacement pipe were radiographically inspected in accordance with 220 C.M.R. 109.10(3) (id.). These replacement sections of pipe were pressure-tested to 415 psig which is above the pressure required to establish an MAOP of 270 psig (id.).

The remaining 5.2 miles of pipe was installed between 1963 and 1993. All of this pipe was coated and cathodically protected from the time of installation. No corrosion leaks have ever occurred on this pipe (id. at 7). All of the pipe was pressure tested to establish an MAOP of 200 psig (Amendment Letter at Table 1A).

All of the valves and fittings on the line will be checked before the uprate begins to ensure that they are rated to operate at 270 psig or more. Any valve or fitting which is not rated for 270 psig or more will be replaced (Petition at 5).

KeySpan intends to uprate the pipeline in accordance with the requirements of Part 192, Subpart K (Petition at 1). These requirements include increasing the pressure in stages from 200 psig to 270 psig. The entire line will be leak surveyed after each pressure increase stage. Any leaks that are located will be repaired before the uprating continues.

The only requirement which would prevent KeySpan from operating the Bourne Line at an MAOP of 270 psig would be the lack of a pressure test to 150 percent of the new MAOP. The line would have to be removed from service in order for KeySpan to perform this pressure test. This would leave the Sagamore Line as the only supply source for KeySpan's 95,000 customers on Cape Cod. That line, by itself, is not large enough to provide the required amount of gas for all customers (Petition at 3). Therefore, the Department grants Keyspan's request for a waiver of the pressure-testing requirements of Part 192, pursuant to our authority under 220 C. > M.R. § 101.02(2), and subject to the conditions discussed below.

Massachusetts and other states have previously granted waivers of the pressure testing provision, which have been subsequently approved by OPS. As previously noted, the Department granted a waiver later approved by OPS in 2002. That waiver allowed KeySpan to establish a new MAOP for the Sagamore Line of 270 psig.

OPS also approved waivers of the pressure testing requirement granted by Washington, Missouri, and Iowa. The Washington Transportation and Utilities Commission allowed an operator to uprate a pipeline to an MAOP of 250 psig, without conducting a pressure test (OPS Approval Letter to Washington Transportation and Utilities Commission, dated March 11, 1997).[3] A gas distribution company in Missouri received a waiver from the Missouri Public Service Commission ("MPSC") allowing the uprating of a pipeline to 175 psig. The pipeline could not be taken out of service and pressure tested because it was the sole supply of gas for a city. OPS approved this waiver, in part, because the MPSC required the company to leak

[3] Approval Letters are available on the WinDOT database.

survey the line annually, a requirement that is more stringent than the federal requirement leak surveying the line once every five years (OPS Approval Letter to Missouri Public Service Commission, dated October 22, 1988). The Iowa Utilities Board waiver was approved in part because of the same annual leak survey imposed on the pipeline operator (OPS Approval Letter to Iowa Utilities Board, dated May 17, 2002).

In Massachusetts, leak surveys are required by regulation. 220 C.M.R. § 109.13(5) mandates that:

> each pipeline shall be leak surveyed at least once each calendar year but at intervals of no more than 15 months. Leakage surveys shall be done with flame ionization detectors or equivalent devices.

The Bourne Line will have to be leak surveyed annually to comply with this regulation after its MAOP is increased to 270 psig.

The Bourne Line's eight mainline valves and four regulator station inlet valves will be designated as primary valves (Petition at 5, Exh. 2A). KeySpan will be required by federal and state regulations to inspect and service each of these valves at least once each calendar year, in compliance with Part 192.747(a), which states:

> Each valve, the use of which may be necessary for the safe operation of a distribution system, must be checked and serviced at intervals not exceeding 15 months, but at least once each calendar year.

With an operating pressure of 270 psig, the Bourne Line will approach transmission line classification. Primary valves on transmission lines must be partially operated annually to comply with Part 192.745(a), which states:

> Each transmission line valve that might be required during any emergency must be inspected and partially operated at intervals not exceeding 15 months, but at least once each calendar year.

In the interest of providing an extra margin of safety to the public, the Department finds that the twelve primary valves should be subject to the same maintenance requirement as transmission line valves. Thus, the valves should be partially operated at least once each calendar year, but no more than 15 months apart.

V. ORDER

Accordingly, after due consideration, it is:

ORDERED: KeySpan Energy Delivery is hereby exempted from the pressure testing requirement in 49 C.F.R. Part 192 and authorized to establish an MAOP of 270 psig for the Bourne Line in the Town of Bourne.

The foregoing exemption is granted subject to the following conditions:

1. Each of the twelve primary valves on the line shall be partially operated at least once each calendar year, but no more than 15 months apart. A record shall be made of the annual valve maintenance function to document KeySpan's compliance with this requirement. Each such record shall be kept for at least five years.

2. Concurrent with the requirements of 220 C.M.R. § 109.13, KeySpan shall perform leakage surveys annually.

3. KeySpan will submit a copy of the uprating procedure for the Bourne Line to the Department's Pipeline Engineering and Safety Division for review at least seven days before the uprate begins.

4. KeySpan will notify the Department's Pipeline Engineering and Safety Division at least 48 hours before the uprate begins.

The foregoing waiver is granted with an effective date of December 1, 2004, provided that the Secretary of Transportation or his designee does not object to the waiver prior to the effective date.

By Order of the Department,

/s/
Paul G. Afonso, Chairman

/s/
James Connelly, Commissioner

/s/
W. Robert Keating, Commissioner

/s/
Eugene J. Sullivan, Jr., Commissioner

/s/
Deirdre K. Manning, Commissioner

Appeal as to matters of law from any final decision, order or ruling of the Commission may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the Order of the Commission be modified or set aside in whole or in part.

Such petition for appeal shall be filed with the Secretary of the Commission within twenty days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court, sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. (Sec. 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971).